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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,583	10/24/2003	Kazuhiro Yanadori	OGW-0317	9481

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EXAMINER

BRUENJES, CHRISTOPHER P

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,583

Applicant(s)

YANADORI, KAZUHITO

Examiner

Christopher P. Bruenjes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20040921.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randle et al (USPN 3,011,525) in view of Ikeda et al (USPN 5,660,210).

Randle et al teach a hose comprising an inner rubber layer (reference number 5, Figure 1), an outer rubber layer (reference

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number 10, Figure 1), at least two reinforcing layers (reference numbers 7 and 9, Figure 1) inserted between the inner and outer rubber layers, and an intermediate rubber layer (reference number 8, Figure 1) interposed between the adjacent reinforcing layers. The reinforcing layers are composed of twisted cords of organic fibers, wherein the twisted cords have 6 turns per inch (col.3, 1.10-12), which is within the range of 15 to 30 turns per 10cm. Regarding claim 3, the fibers are made of polyester fibers (col.3, 1.10). Regarding claim 4, the twisted cords have a single-twist structure. Regarding claim 6, the reinforcing layers are formed by braids of the twisted cords (col.2, 1.58-60). Note the limitation "power steering hose" is a functional limitation within the preamble and receives little patentable weight. The body of the claim provides the structure of the hose and whether the hose is used as a power steering hose or a hydraulic braking hose is not germane to the patentability of the article.

Randle et al fail to teach the intermediate elongation at 0.85cN/dtex or the elongation at break of the twisted cords. However, Ikeda et al teach that when forming a hose having a similar structure of two reinforcing layers made from polyester thread positioned within inner, outer and intermediate rubber layers the elongation of the polyester thread at break is set at

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about 10% and the intermediate elongation is about 2.7% (see abstract). Ikeda et al further teach that the elongation values of the threads forming the reinforcing layers of the rubber hoses having the structure similar to Randle et al is are important and are optimized based on the desired physical properties of the final article. In particular, when the elongation at break is increased the fatigue resistance is increased and the intermediate elongation is increased. The increase in intermediate elongation leads to larger volume expansion (col.2, 1.44-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to realize that Ikeda et al and Randle et al are analogous insofar as both are concerned with fiber reinforced rubber hoses and that the elongation values of the threads or cords forming the reinforcing layers of fiber reinforced rubber hoses are optimized based on the desired volume expansion, fatigue resistance, and tensile strength desired, as taught by Ikeda et al, and that an elongation at break of about 10% and a intermediate elongation value of 2.7% are well known in the art of fiber reinforced rubber hoses, as taught by Ikeda et al.

Thus, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to

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select the optimum elongation at break and intermediate elongation value at 0.85cN/dtex within the claimed ranges depending on the intended end result of the hose with regards to volume expansion, fatigue resistance, and tensile strength, as taught by Ikeda et al.

2. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randle et al in view of Ikeda et al as applied to claims 1-3 above, and further in view of Kuribayashi et al (USPN 5,371,153).

Randle et al and Ikeda et al taken as a whole teach all that is claimed in claims 1-3 and teach that the reinforcing layers are formed by braids of the twisted cords (col.2, 1.58-60 of Randle et al). Randle et al and Ikeda et al fail to teach that the twisted cords have a double-twist structure. However, Inada et al teach reinforcing fiber layers for rubber hose reinforcement formed of twisted organic fibers (see abstract and col.1, 1.8-13) and teaches that is well known in the art to twist these organic fibers into double-twist structures (col.5, 1.1-3) in which a plurality of primary twisted cords are twisted together with final twists in a same twist direction of the primary twisted cords. One of ordinary skill in the art would have recognized that the references are analogous insofar as all

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three references are concerned with fiber reinforcement layers used in the formation of rubber hoses.

Therefore it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select a double-twist structure as the twisted cords of Randle et al and Ikeda et al depending on the intended end result of the hose since double-twist structure are well known and substitutable twist structure for twisted cords used in formation of braided reinforcement layers for rubber hoses, as taught by Kuribayashi et al.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Keister (USPN 4,343,333); Inada et al (USPN 4,787,200); Nakanishi (USPN 5,346,731); Wilberg (USPN 3,056,429); Fisher et al (USPN 6,742,545); Arima et al (US 2002/0157722); Ishikawa et al (US 2002/0017332).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Bruenjes whose telephone number is 571-272-1489. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

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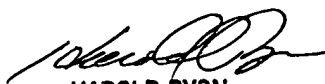
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher P Bruenjes
Examiner
Art Unit 1772

CPB

September 2, 2005


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

9/2/05